Religion, Religiosity and Educational Attainment: Evidence from the Compulsory Education System in England

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Abstract

This paper investigates the effect of religion on the educational attainment of pupils in their final year of compulsory education in England. The results show that pupils that identify with any religion have better academic performance than other pupils, after controlling for various family, parental and neighbourhood characteristics. The outperformance is reinforced by previous attendance at religious classes but there is no similar effect from considering religion to be very important to their life. Allowing for religion-specific effects shows that Muslim pupils outperform Christian pupils although the performance of the latter group is boosted by attendance at religious classes.

Keywords: Educational attainment; religion; religiosity; England

JEL Codes: I21, J15, Z12

1. Introduction

In recent years, religious adherence has declined in many developed countries (World Values Survey, 2017) and this trend is forecast to continue in coming decades (Pew Research Centre, 2015). In the United Kingdom, over half of the adult population and almost three-quarters of those aged 18-24 now identify themselves as having no religion, compared to 34% of adults and 55% of the 18-24 age group in 1986 (NatCen Social Research, 2017). While the impact of declining levels of religious affiliation is multifarious, encompassing effects on health (Koenig,

2015), crime (Adamczyk et al., 2017) and voting behaviour (Smidt et al, 2009), this paper examines the effect of religion on human capital, one of the key drivers of economic growth (Griliches, 1970; Mankiw et al., 1992; Cohen and Soto, 2007).

We contribute to a growing literature on the effect of religion on economic outcomes (McCleary and Barro, 2006; Benabou et al., 2015; Lehrer, 2011). Specifically, we empirically investigate the role of religion in explaining variations in educational attainment in the final year of the compulsory education system in England. In so doing, we consider a determinant of educational performance that, unlike determinants such as social origins (Shavit and Blossfield, 1993; Breen et al., 2009; Bukodi and Goldthorpe, 2013), ethnicity (Fryer and Levitt, 2006; Dustmann et al, 2010; Wilson et al., 2011) and gender (McNabb et al, 2002; Buchmann et al., 2008; Mensah and Kiernan, 2010), has received relatively little attention in the educational inequalities literature. The limited research that has been conducted has found that pupils that identify with a religion generally outperform those that do not identify with a religion (Sander, 1992; 2010) but mixed results have been found relating to whether greater religiosity, usually measured by participation in religious activities, is associated with higher educational attainment (Mohanty, 2016).

A limitation of the literature to date is its almost exclusive focus on the US. It is therefore of interest to test whether the same conclusions are reached using data from the United Kingdom, which has a Muslim share of the population that is five times that of the US share and an 'unaffiliated' share of more than a quarter of the population, compared to less than a sixth in the US (Pew Research Centre, 2015). There is also an ostensibly greater role for religion in the English educational system. In particular, English schools should provide a daily act of worship. In schools without a religious character, this must be 'broadly Christian' unless the pupils are mostly of a different faith. In schools with a religious character, most of which

are Christian, these will reflect the religious designation of the schools (Long, 2016). A further difference is that, unlike in the US, religious education is a compulsory subject in all English schools and the syllabus in non-faith schools is expected to 'reflect that the religious traditions of Great Britain are in the main Christian, whilst taking account of teaching and practices of the other principal religions represented in Great Britain' (Department for Children, Schools and Families, 2010: p.10) . However, there is widespread non-compliance with the requirement to provide a daily act of worship (Cassidy et al., 2015) and parents may withdraw their children from religious education classes without providing a reason (Long, 2016) so the likely effect of these differences between the US and UK education systems should not be overstated.

From a research design perspective, analysis of England offers the advantage that, unlike the US, it has a national curriculum (see Roberts, 2018, for an overview), which ensures uniformity of standards and thus comparability of student performance across religious groups. Moreover, the dataset, the Longitudinal Study of Young People in England (LSYPE), is uniquely well-suited for an analysis of the effects of religion on educational attainment. Firstly, in addition to providing information on the religion with which a pupil identifies, it contains variables that can be used to measure a pupil's religiosity. The latter is important since it allows us to understand whether the effects of religion are reinforced or weakened by strong adherence to a particular religion. Secondly, LSYPE over-samples ethnic minorities, which is helpful for the present analysis because pupils in the UK identifying with religions other than Christianity mostly belong to ethnic minorities. Thirdly, pupils in LSYPE are linked to the National Pupil Database (NPD), which provides a direct measure of educational attainment in the form of standardised test scores and allows us to avoid the use of a proxy such as years of education. Finally, LSYPE collects information on a rich set of family, parental and neighbourhood

characteristics that may be associated with test scores, allowing us to control for many factors that may otherwise lead to biased estimates of the effects of religion.

The remainder of this paper is organised as follows. Section 2 sets out the theoretical framework and relevant empirical findings. Section 3 describes the data and Section 4 sets out the econometric model. Section 5 describes the results. Section 6 concludes.

2. Literature Review

Theoretical Framework

Religion may have 'primary' and 'secondary' effects on lifetime educational attainment (Boudon, 1974; Breen and Goldthorpe, 1997). Primary effects determine academic performance while secondary effects determine educational choices, conditional on previous performance, such as the decision to continue to higher levels of education. Because it is not possible to drop out of school before KS4 in England, the focus of this study is on primary effects. However, a shortcoming of this framework is that it fails to acknowledge that individuals, having decided whether or not to continue in education, may alter their behaviour (Erikson et al., 2005). For example, a pupil that has decided not to continue studying beyond their current level of education may devote less effort to preparing for their examinations since their marks may have less bearing on their future career. But it is inherently difficult to detect such behavioural shifts from observational data.

Jackson (2012) identifies the following mechanisms as generating differences in educational performance across groups: genetic; the home environment and its implications for economic, cultural and social resources; health; family size; cultural biases in schools and psychological mechanisms. While religion may have an effect through several of these mechanisms, our focus is on the second. This is in line with previous literature such as Sherkat

and Darnell (1999) who argue that 'humanistic' values in the US secular education system conflict with a range of conservative Protestant beliefs and that this may lead to a lack of support amongst fundamentalist parents for their children's educational pursuits. Similar conflicts may also exist for religious pupils in England where the Christian traditions, which are likely to have had lasting impacts upon educational institutions (Feldmann, 2019; Inglehart and Baker, 2000), imply that the conflict would be greatest for non-Christians.

Attendance at religious classes can be considered as a means of acquiring 'religious human capital' (Iannocone, 1990) which may allow an individual to derive greater satisfaction from the practice of religion and therefore for religion to assume a greater role in an individual's life. However, this relationship is not automatic since there are other ways of acquiring religious human capital such as participation in religious ritual, both at home and in religious establishments, and the study of religious subjects may take place outside of formal classes. The model of Chiswick (2006) shows that if investment in religious human capital has positive (negative) complementarities with investments in secular human capital, a positive (negative) effect of attendance at religious classes on secular education would be expected. Although it should be emphasised that religious classes are only one input in the formation of religious human capital, the effect of greater religiosity can also be expected to depend upon the complementarity between religious and secular education. Chiswick (2006) argues that Conservative Protestants in the US experience negative complementarities between investments in religious and secular education, whereas Jews have successfully managed to limit the degree of negative complementarity.

Regardless of the content of religious teaching, religion may improve educational attainment by increasing a pupil's social capital. Muller and Ellison (2001) and Glanville et al. (2008) argue that religious involvement strengthens intergenerational linkages and peer networks which in turn have positive effects on educational outcomes. Such positive effects

are likely to be stronger for pupils that attend religious classes because this will directly facilitate contact and the building of relationships with peers. Similarly, pupils that consider religion as important to their life may also experience educational benefits if they hold that view as a result of having made investments in religious human capital that allowed them to develop their social capital. However, as noted above, religious human capital may also be developed in ways that would not increase social capital. In sum, the total effect of religion and religiosity on educational attainment is theoretically ambiguous if one assumes negative complementarities between secular and religious education.

Empirical Findings

The early empirical literature consistently revealed higher levels of schooling among Jews, but presented mixed findings on the ranking of Catholics and Protestants (Chiswick, 1983; Chiswick, 1988; Tomes, 1983; Tomes, 1985). However, the primary focus of these studies was on the estimation of earnings functions and little attention was paid to whether differences in educational levels represent causal effects. Subsequent literature has directly attempted to estimate the causal impact of religion on education, by controlling for as wide a range of observed characteristics as possible. Sander's (1992) study finds that, among men and women in the US, Jews, followers of "other religions", Mormons, Episcopalians, Catholics and Methodists receive significantly more schooling than the base group comprising Lutherans. Among women, Presbyterians also receive significantly more schooling. Regardless of gender, individuals with no religion do not outperform Lutherans significantly. A later US-based study of Lehrer (1999) obtains the following ranking of years of schooling (from highest to lowest) after controlling for a range of potential confounders: Jews, Catholics, mainstream Protestants and fundamentalist Protestants. Although also using US data, Sander (2010) considers more diverse religious groups and finds that Jews and Muslims have higher educational attainment

than Protestants and Catholics. The same applies to Buddhists that were either born in the US and/or living in the US at the age of 16. Individuals with no religious upbringing have the lowest levels of educational attainment, out of all groups considered. We are aware of only one study that uses UK data to consider this relationship, namely Strand (2007). He uses the same data set as we will analyse below, but his main focus is on the comparison of unweighted sample means. These reveal the following hierarchy for educational attainment at the age of 13/14 (from best to worst): Jewish, Hindu, Christian, Sikh, None, Another religion, Buddhist, Muslim and "Don't know".

Fewer studies have examined the effects of religious participation on educational education. Lehrer (2004) and Mohanty (2016) find that more frequent attendance at religious services when young is positively related to completed years of schooling. Similarly, Regnerus (2000) finds that participation in religious activities is positively related to test scores in large metropolitan areas in the US. More recently, Lee (2013) shows that the repeal of Sunday closing laws ('blue laws') in the US had a negative impact on both years of education and high school completion. One of the suggested channels for this effect is that the repeal led children to go shopping or spend times with friends at malls rather than attend religious services – this is consistent with Gruber and Hungerman (2008) - which in turn had a negative effect on their educational attainment. By contrast, Mukhopadhyay (2011) finds that participating in a religious activity at least once a month is associated with lower educational attainment among immigrants to the US. Darnell and Sherkat (1997) take a different approach to measuring religiosity by using information on beliefs rather than a measure of participation in religious activities. Specifically, they find that pupils that believe in the inerrancy of the Bible have lower educational attainment.

3. Data

This paper uses data from waves 1 to 3 of the Longitudinal Study of Young People in England (LSYPE). The target population of LSYPE comprises Year 9 pupils (born in 1989/90) who were attending schools in England in the summer of 2004. Within each school, pupils from major ethnic minority groups (Indian, Pakistani, Bangladeshi, Black African, Black Caribbean and Mixed) were oversampled. Our regressions will therefore be weighted by a design weight provided in Wave 3 that accounts for this and other aspects of sampling. The Wave 1 interview was conducted in the summer of 2004, when pupils were in Year 9 (aged 13/14). The same pupils were re-interviewed in Year 10 (Summer 2005, Wave 2) and Year 11 (Summer 2006, Wave 3), the latter being the final year of compulsory schooling in England. Further information on LSYPE is available in Anders (2012).

LSYPE is linked to a subset of the National Pupil Database (NPD), which records nationally standardised test results for all pupils attending state schools in England. This allows observation of each LSYPE pupil's results in the nationwide tests taken at Key Stage 2 (KS2; Year 6), Key Stage 3 (KS3; Year 9) and Key Stage 4 (KS4; Year 11). We focus on KS4, which incorporates General Certificates of Secondary Education (GCSEs), since results at this stage largely determine whether pupils continue in education and have been found to have large effects on future earnings (Hayward et al., 2014).[1] The KS4 tests cover English, maths, science

[1] Among individuals that do not progress beyond KS4, those with five or more GCSEs (including English and Maths) graded A*-C earn around £100,000 (2013 prices) more, on average, over their lifetime than individuals that fail to achieve this benchmark (Hayward et al., 2014).

and other optional subjects. While the full NPD dataset records test results for both LSYPE and non-LSYPE pupils, it provides only basic socio-demographic information (e.g. ethnicity, gender, eligibility for free school meals) that is available in the Pupil Level Schools Census. Analyses of the full NPD dataset (Dustmann et al., 2010; Wilson et al., 2011) can therefore only control for a limited number of pupil and household characteristics that may influence the test scores. By contrast, LSYPE provides very rich information on family background, parental characteristics, neighbourhood deprivation and, most importantly, religion. In addition, two measures of religiosity are available. Firstly, pupils are asked about the importance of religion to their way of life. We use this to generate an indicator for whether the pupil answered 'very important', as opposed to 'fairly important', 'not very important' or 'not at all important'. Pooling the latter three responses was necessary to capture statistically meaningful variations because most religious groups had very few pupils that responded 'not very important' or 'not at all important' (see Table 1). Pupils were also asked whether they attended religious classes in the twelve months prior to surveying in waves 1 or 2 and their responses to this question are used to construct the religious classes variable.[2] The full list of variables that are used in the empirical analysis are presented in Table A1 in the appendix.

[Table 1 about here]

Following Wilson et al. (2011), we use as our dependent variable the pupil's overall point scores at KS4. Following Dustmann et al. (2010), the overall score is standardised to have

[2] The question is phrased as follows: 'In the last 12 months have you ever gone to classes or courses connected with any religious establishment you might go to (such as a church, chapel, synagogue or mosque)?' This question was not asked in LSYPE in wave 3.

a mean of 50 and a standard deviation of 10. To capture the notion of growing up with a particular religion, we exclude pupils whose religion is inconsistent between waves. As a robustness check, we also experimented with excluding cases where a pupil and either of her/his parents do not share the same religion in order to treat religion as a family characteristic; this had little effect on the results. We also exclude pupils that do not identify with any religion yet state that their religion is important to their way of life, and pupils that are coded as having different ethnicities in different waves.

4. Empirical specification

The baseline empirical specification is of the form:

$$s_i = \alpha + \beta relig_i + \gamma X_i + \varepsilon_i \quad (1)$$

where s_i is the standardised KS4 test score of pupil i; $relig_i$ is a dummy variable that equals one if pupil i belongs to any religious group; and X_i is a vector of covariates including ethnicity identifiers and variables measuring family, parental and neighbourhood characteristics.[3] α, β and γ are parameters to estimate, and ε_i is the error term. This baseline specification is subsequently augmented with two measures of religiosity, to explore if the effects of having a religion are magnified by closer engagement with that religion. Specifically, $relig_i$ is interacted with a dummy indicating whether the pupil regards religion as very important to the way that they lead their life and with a dummy indicating whether the pupil attended religious

[3] The ethnic groups follow the classification defined for oversampling (Bangladeshi, Indian, Pakistani, Black African, Black Caribbean, Other and Mixed Heritage).

classes. A further extension allows for between-religion heterogeneity by replacing the generic dummy $relig_i$ with a set of binary indicators for identifying as Christian, Muslim, and Other Religion (including Hindus, Sikhs, Jews and Buddhists). All models are estimated with and without school fixed effects.

In order for estimation of equation (1) to provide unbiased estimates of the effect of religion on educational attainment, we require the conditional independence (or selection on observables) assumption to hold.[4] This implies that, having controlled for observed characteristics, there will be no correlation between the religion dummy and unobservable determinants of educational attainment. The validity of this assumption will be determined by the extent and relevance of the covariates included in the model. Fortunately, the rich set of sociodemographic variables in LSYPE allows us to control for a host of characteristics which may affect educational attainment. Following Strand's (2011) study, our controls include measures of social class, mother's education, free school meal eligibility, home ownership, family structure, and neighbourhood income deprivation.[5] We also control for factors that have

[4] An alternative strategy that is not reliant on the conditional independence assumption would be to identify a variable that determines whether a pupil belongs to a religion, is uncorrelated with the error term and has no direct effect on educational attainment and use this as an instrumental variable. We were unable to find a convincing candidate for such a variable in the dataset and are not aware of any policy change or other major event that induced quasi-experimental variation in the sample cohort's religious affiliations.

[5] Strand (2011) analysed an intermediate stage of compulsory schooling, KS3, whereas the present analysis focuses on the final outcome at KS4. Our specification therefore omits control variables observed at KS3 but not at KS4, namely, measures of parental involvement in school,

featured in previous economic studies on ethnic gaps in educational attainment. These include whether English is a first language (Dustmann et al., 2010; Siahaan et al, 2014); whether the mother was a teenager when the pupil was born (Fryer and Levitt, 2004; 2006); birth weight and a low birth weight indicator (Fryer and Levitt, 2004; 2006; Black et al. 2007; Chatterji et al, 2014); number of siblings (Becker and Lewis, 1973; Booth and Kee, 2009); and birth order (Black et al, 2005; Kantarevic and Mechoulan, 2006; Booth and Kee, 2009).

5. Results

Table 2 reports the estimated coefficients on the key variables from the specifications that assume homogenous effects of identifying with a religion, regardless of the religion. Full results are presented in Table A2. Controlling for the full set of characteristics summarised in the preceding section, the first column shows that pupils that identify with any religion perform 0.208 standard deviations better than other pupils. The inclusion of school fixed effects

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parental supervision, absence from school, pupil's future planning attitude, homework and academic self-concept. We also exclude variables described by Strand (2011) as ‘parental attitudes and behaviours’ and 'student risk and protective factors' on the grounds these may be functions of religion. The former are measures of whether the pupils lives in a household with a computer, received private tuition, whether the parents want the pupil to continue in full-time education post-16 and whether the parents quarrel with the pupil. The latter are measures of whether the pupil has special educational needs, played truant in the last 12 months, has been excluded in the last three years or has had contact with the social services or the police as well as measures of pupil aspirations and their attitude to school and indicators.

(column 2) reduces the gap, but it remains positive and statistically significant and is around a quarter of the estimated effect of having a mother with a degree or equivalent level of education (relative to the baseline of no qualifications). The final two columns introduce interactions between the religion dummy and whether the pupil regards religion as very important to their way of life and whether they previously attended religious classes. The results are suggestive of positive complementarity between investments in religious and secular education in England: the positive attainment gap is increased by attending religious classes. By contrast, the gap does not vary with the assessment of the importance of religion to their life.

[Table 2 about here]

Table 3 disaggregates the religion variable in order to investigate whether the estimated effects in Table 2 conceal heterogeneity across different religions. The results in the first column show that pupils of all religions outperform the base group, namely pupils of no religion. The Muslim-No Religion gap is particularly wide but Christian pupils also have a positive and significant gap. The positive gaps associated with religious groups remain robust to the inclusion of school fixed effects.

[Table 3 about here]

The estimated coefficients on the interactions between the religion dummies and two religiosity measures (final two columns of Table 3) are mostly insignificant. For the largest group (Christians), we observe a positive and significant effect of having attended religious classes, which is consistent with the homogenous effect specification in Table 2. However, this is the group with the smallest proportion of attendees at religious classes (see Table 1). For pupils of other beliefs, we also observe positive effects of religious classes on secular educational attainment. The exception is Muslims, the only group where a majority of pupils

attend religious classes, but the magnitude of the negative interaction effect is negligible relative to the positive effect of identifying as Muslim and is not statistically significant. Significant interactions between having a religion and considering it to be very important to one's life were not present in the homogenous effect specifications, and are only found in the heterogeneous effect specifications for pupils of other beliefs.

As shown in Table 4, not all religious affiliations are observed for each ethnic group in the sample. This invites the question of whether the religion-related attainment gaps above are artefacts of the assumed linearity of the regression model in ethnic dummies, which conceals further heterogeneity across ethnic groups.

[Table 4 about here]

Table 5 explores this by re-estimating the heterogeneous effects specification separately for those ethnic groups (White, Indian, Black African and Mixed Heritage) which have sufficient within-group variations in religious affiliation. None of the religion effects are significant for Indian, Black African or Mixed Heritage pupils. However, the effect of Christianity is positive and significant among White pupils. There is also a large and positive effect of being Muslim but it should be noted that very few White pupils belong to this faith.

[Table 5 about here]

6. Conclusion

This paper investigates the impact of religion on educational attainment in the English compulsory education system. We find that identifying with a religion is associated with better academic performance at the final stage of compulsory schooling. This is consistent with previous results for the US (Sander, 1992; 2010). The positive effect is particularly strong for

Muslims but Christians and pupils of Other Beliefs also have higher attainment than pupils of no religion. There is no strong evidence of differential effects for pupils that regard religion as important to their way of life, but the outperformance is reinforced for pupils that previously attended religious classes.

One interpretation of the finding of positive effects of attendance at religious classes is that investments in religious human capital are complementary to investments in secular education. However, if this were the case, it would be expected that regarding religion as important to their way of life – which may result from a variety of forms of investment in religious human capital – will also lead to higher educational attainment and we do not find evidence in favour of this proposition. Instead, we obtain evidence of positive effects of a particular form of investment in religious human capital, which is likely to build peer networks. As such, we consider our results to be more supportive of positive effects of religion on social capital, which in turn improves educational attainment. This has important implications since it suggests that it is not religion per se, but rather the social networks associated with religion, that drive positive effects on educational attainment and that it may therefore be possible for these to be emulated by other social capital enhancing activities. However, this is an area that requires further research.

In light of the debate in England on whether there should be more publicly-funded faith schools (Long and Bolton, 2017) and government plans to remove the limit on the proportion of pupils from their faith that such schools can admit (BBC News, 2016), the results do not suggest that religious pupils of any faith were disadvantaged in the period under investigation. Unfortunately, the relatively small number of pupils in the dataset that attend faith schools prevents a rigorous analysis of whether religious groups perform better in such schools. This therefore would be an interesting area for future research since, so far, most of this literature

has used US data (Sander and Krautmann, 1995; Nguyen et al., 2006) and focused on Catholic schools.

In terms of post-schooling outcomes, the previous literature has tended to show that the benefits of belonging to a religion continue into later life. For example, a recent study by Bettendorf and Dijkgraaf (2010) found that church membership has a positive effect on income in high-income countries but a negative effect in low-income countries, even after controlling for education. This implies both a direct and indirect effect (through education) of religion on economic outcomes. More broadly, it suggests that recent declines in rates of religious identification may have depressing effects on living standards.

A limitation of the research is the inability to estimate effects precisely for individual religions other than Christianity and Islam. This stems from the lack of available observations. One means of addressing this in the UK context is to use the NPD but, as discussed previously, this suffers from a lack of information on pupil characteristics. Another limitation of the dataset is the absence of information on the classroom to which a pupil belongs. While the inclusion of school fixed effects prevents the contamination of the estimated effects by the possibility that religious students may higher quality schools, bias may still exist if religious pupils are assigned to different classes than pupils that identify with no religion.

While the use of data from a country with a national curriculum simplifies the analysis by ensuring comparability of pupil performance, the fact that many countries have a more stratified education system may limit the generalisability of the results. Since more stratified educational systems would be expected to lead to greater educational inequalities because of the greater opportunities for groups to take different educational paths (Gross et al., 2016), further research on such countries would be valuable although care would need to be taken to account for both ‘primary’ and ‘secondary’ effects on educational attainment.

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Appendix

[Table A1 about here]

[Table A2 about here]

Table 1. Cross-Tabulation of Importance of Religion and Religious Classes with Religion

	None	Christian	Muslim	Other	Total
Religion Importance					
Not religious	3,325	0	0	0	3,325
	(2,653)	(0)	(0)	(0)	(2,653)
Very	0	418	382	131	931
	(0)	(471)	(1,114)	(256)	(1,841)
Fairly	0	993	81	133	1,207
	(0)	(921)	(205)	(263)	(1,389)
Not very	0	1,764	^	^	1,813
	(0)	(1,465)	^	^	(1,561)
Not at all	0	1,031	^	^	1,050
	(0)	(859)	^	^	(882)
Religious Classes					
Not attend	3,325	3,185	205	182	6,898
	(2,653)	(2,723)	(566)	(368)	(6,310)
Attend		1,021	283	125	1,428
		(993)	(797)	(226)	(2,016)
Total	3,325	4,206	488	307	8,326
	(2,653)	(3,716)	(1,363)	(594)	(8,326)

Unweighted figures in parenthesis Source: LSYPE

* denotes suppressed to comply with the data provider's non-disclosure requirements

Table 2. Pooled Religious Gaps in Educational Attainment

	(1)	(2)	(3)	(4)
Religion	2.083***	1.323***	1.791***	1.167***
	(0.250)	(0.229)	(0.261)	(0.239)
Religion X Religion Important			-0.544	0.149
			(0.496)	(0.367)
Religion X Religious Classes			1.501***	0.658**
			(0.306)	(0.268)
Control Variables	Yes	Yes	Yes	Yes
School Fixed Effects	No	Yes	No	Yes
Observations	8,326	8,326	8,326	8,326

Robust standard errors in parentheses. *, **, *** indicate statistical significance at 10%, 5% and 1% levels.

Table 3. Heterogeneous Religious Gaps in Educational Attainment

	(1)	(2)	(3)	(4)
Christian	2.029***	1.272***	1.669***	1.051***
	(0.251)	(0.229)	(0.265)	(0.243)
Muslim	4.323***	3.179***	5.537***	4.243***
	(0.944)	(0.741)	(1.246)	(0.920)
Other Beliefs	2.690***	2.235***	2.873***	2.177**
	(1.018)	(0.777)	(1.101)	(0.864)
Religion Importance Interactions				
Christian			-0.248	0.715
			(0.664)	(0.489)
Muslim			-1.414	-0.825
			(0.863)	(0.687)
Other Beliefs			-2.301**	-1.283*
			(1.106)	(0.755)
Religious Classes Interactions				
Christian			1.686***	0.791**
			(0.358)	(0.309)
Muslim			-0.239	-0.590
			(0.655)	(0.554)
Other Beliefs			2.015*	1.428
			(1.096)	(0.923)
Control Variables	Yes	Yes	Yes	Yes
School Fixed Effects	No	Yes	No	Yes
Observations	8,326	8,326	8,326	8,326

Robust standard errors in parentheses. *, **, *** indicate statistical significance at 10%, 5% and 1% levels.

Table 4. Cross-Tabulation of Ethnicity and Religion

	None	Christian	Muslim	Other	Total
White	3,226	3,898	29	76	7,230
	(2,503)	(3,113)	(24)	(49)	(5,689)
Mixed	62	81	^	^	156
	(120)	(146)	^	^	(291)
Indian	^	^	34	193	234
	^	^	(107)	(516)	(635)
Pakistani	^	^	241	^	242
	^	^	(617)	^	(621)
Bangladeshi	^	^	98	^	98
	^	^	(489)	^	(489)
Black Caribbean	10	86	^	^	98
	(12)	(208)	^	^	(225)
Black African	^	109	38	^	147
	^	(215)	(72)	^	(287)
Other	26	24	37	34	122
	(17)	(19)	(33)	(20)	(89)
Total	3,325	4,206	488	96	8,326
	(2,653)	(3,716)	(1,363)	(71)	(8,326)

Unweighted figures in parenthesis Source: LSYPE

^ denotes suppressed to comply with the data provider's non-disclosure requirements

Table 5. Religious Gaps in Educational Attainment by Ethnic Group

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	White		Indian		Black African		Mixed	
Christian	1.938***	1.086***					1.431	2.074
	(0.255)	(0.241)					(1.439)	(3.040)
Muslim	6.870***	7.225***	-1.054	-1.638	-0.672	0.933	-0.892	3.517
	(1.832)	(2.289)	(1.076)	(1.293)	(1.422)	(2.455)	(2.322)	(4.305)
Other Beliefs	2.000	1.644						
	(1.350)	(1.245)						
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
School Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes
Observations	5,689		616		287		286	

No religion is the base group for White and Mixed while Hindu is the base group for Indians and Christian is the base group for Black Africans. Robust standard errors in parentheses. *, **, *** indicate statistical significance at 10%, 5% and 1% levels.

Table A1. Variable Descriptions

Variable	Description
Test scores	Standardised test score at key stage 4
Religion	Dummies coded 1 if pupil is: 1. Christian 2. Muslim 3. Other Omitted category is 'no religion'.
Religion important	Dummies coded 1 if pupil regards religion as very important
Religious classes	Dummy coded 1 if pupil attended religious classes in 12 months prior to surveying in waves 1 and 2
Ethnicity	Dummies coded 1 if pupil is: 1. Bangladeshi 2. Indian 3. Pakistani 4. Black African 5. Black Caribbean 6. Other 7. Mixed Omitted category is 'white'.
English	Dummy coded 1 if pupil's first language is English
Female	Dummy coded 1 if pupil is female
Social class	Dummies coded 1 if home is: 1. Higher managerial and professional 2. Lower managerial and professional 3. Intermediate 4. Small employers and own account workers 5. Lower supervisory and technical 6. Semi-routine 7. Routine occupations Omitted category is 'Never worked/long-term unemployed'
Mother's education	Dummies coded 1 is mother's highest qualification is: 1. Degree or equivalent 2. Higher education below degree level 3. A-level of equivalent 4. GCSE grades A-C or equivalent 5. Other qualifications Omitted category is 'no qualifications'.
Free school meal	Dummy coded 1 if pupil is entitled to free school meals
Rented	Dummy coded 1 if pupil lives in a rented home
Single parent	Dummy coded 1 if pupil lives in a single parent household
IDACI index	Income deprivation affecting children index
Birth order	Dummies coded 1 if pupil is: 1. Second child 2. Third child 3. Fourth child 4. Fifth or more child Omitted category is first child

Variable	Description
Siblings	Number of siblings
Birth weight	Birth weight in kilograms
Low birth weight	Dummy coded 1 if pupil had birth weight lower than 2.5 kilograms
Teenage mother	Dummy coded 1 if pupil's mother was a teenager when pupil was born

For each variable, dummy variables for missing values were included to avoid loss of observations. For potentially time-varying variables, values were taken from responses in wave 3.

Table A2. Pooled Religious Gaps in Educational Attainment (Complete Results)

	(1)	(2)	(3)	(4)
Religion	2.083***	1.323***	1.791***	1.167***
	(0.250)	(0.229)	(0.261)	(0.239)
Religion X Religion Important			-0.544	0.149
			(0.496)	(0.367)
Religion X Religious Classes			1.501***	0.658**
			(0.306)	(0.268)
Ethnicity				
Bangladeshi	4.815***	3.542***	4.675***	3.262***
	(0.738)	(0.677)	(0.796)	(0.713)
Indian	3.740***	3.552***	3.630***	3.413***
	(0.477)	(0.514)	(0.510)	(0.537)
Pakistani	1.090*	2.343***	0.887	2.018***
	(0.567)	(0.540)	(0.654)	(0.593)
Black African	2.679***	1.542**	2.416***	1.217*
	(0.661)	(0.680)	(0.725)	(0.735)
Black Caribbean	-0.449	-0.658	-0.636	-0.811
	(0.723)	(0.631)	(0.737)	(0.635)
Other	5.726***	4.224***	5.601***	4.119***
	(1.272)	(0.880)	(1.266)	(0.895)
Mixed	1.457*	1.307**	1.390*	1.271**
	(0.836)	(0.530)	(0.838)	(0.530)
English	0.021	0.377	0.053	0.444
	(0.589)	(0.418)	(0.591)	(0.418)
Female	2.431***	2.424***	2.429***	2.429***
	(0.226)	(0.208)	(0.226)	(0.208)
Social Class				
Higher managerial and professional	3.910***	2.522***	3.850***	2.502***
	(0.539)	(0.404)	(0.538)	(0.404)
Lower managerial and professional	2.532***	1.295***	2.531***	1.296***
	(0.499)	(0.381)	(0.498)	(0.382)
Intermediate	2.122***	1.108**	2.155***	1.123**
	(0.627)	(0.491)	(0.626)	(0.490)
Small employers and own account workers	1.590***	0.183	1.613***	0.199
	(0.612)	(0.513)	(0.612)	(0.514)
Lower supervisory and technical	0.258	-0.301	0.309	-0.291
	(0.547)	(0.430)	(0.545)	(0.430)
Semi-routine	1.031*	0.409	1.052*	0.405
	(0.574)	(0.482)	(0.573)	(0.484)
Routine occupations	-0.318	-0.451	-0.296	-0.451
	(0.569)	(0.454)	(0.567)	(0.454)
Missing Social Class	0.098	0.200	0.098	0.185
	(0.690)	(0.492)	(0.688)	(0.491)
Mother's Education				
Degree or equivalent	6.781***	4.572***	6.696***	4.564***
	(0.501)	(0.403)	(0.500)	(0.402)
Higher education below degree level	4.043***	2.749***	3.989***	2.740***
	(0.483)	(0.399)	(0.482)	(0.398)
A-level of equivalent	3.911***	2.755***	3.901***	2.766***
	(0.472)	(0.406)	(0.470)	(0.406)
GCSE grades A-C or equivalent	2.016***	1.337***	2.014***	1.353***
	(0.416)	(0.339)	(0.414)	(0.339)
Other qualifications	0.362	-0.292	0.370	-0.268
	(0.492)	(0.387)	(0.490)	(0.387)
Missing Mother's education	3.577***	2.387***	3.553***	2.399***
	(0.586)	(0.477)	(0.583)	(0.478)

	(1)	(2)	(3)	(4)
Free school meal	-0.486	-1.004**	-0.437	-0.997**
	(0.530)	(0.433)	(0.529)	(0.433)
Missing free school meal	-0.066	-9.431***	-0.081	-9.428***
	(0.461)	(1.547)	(0.462)	(1.542)
Rented	-3.078***	-2.446***	-3.084***	-2.452***
	(0.354)	(0.311)	(0.353)	(0.310)
Missing Rented	-0.893	-1.415	-0.755	-1.343
	(1.815)	(1.263)	(1.796)	(1.266)
Single Parent	-2.308***	-1.908***	-2.312***	-1.898***
	(0.315)	(0.268)	(0.315)	(0.268)
Missing Single Parent	-1.315	-1.442**	-1.373	-1.481**
	(0.842)	(0.670)	(0.847)	(0.672)
IDACI index	-5.000***	-5.068***	-4.957***	-5.063***
	(0.854)	(0.803)	(0.851)	(0.804)
Missing IDACI index	9.664***	8.366***	9.516***	8.290***
	(2.294)	(2.500)	(2.312)	(2.514)
Birth Order				
Second child	-1.378***	-1.029***	-1.380***	-1.019***
	(0.254)	(0.211)	(0.254)	(0.211)
Third Child	-1.897***	-1.617***	-1.880***	-1.607***
	(0.358)	(0.294)	(0.357)	(0.294)
Fourth Child	-2.025***	-1.163**	-2.007***	-1.139**
	(0.636)	(0.492)	(0.634)	(0.491)
Fifth Child	-1.710	-1.610*	-1.633	-1.556*
	(1.076)	(0.843)	(1.070)	(0.842)
Missing Birth Order	-1.034	-2.146	-1.140	-2.193
	(1.707)	(1.393)	(1.707)	(1.393)
Siblings	-0.421***	-0.365***	-0.438***	-0.377***
	(0.105)	(0.088)	(0.105)	(0.088)
Missing Siblings	-1.276	0.027	-1.240	0.033
	(1.503)	(1.315)	(1.508)	(1.316)
Birth weight	0.311	0.226	0.287	0.214
	(0.254)	(0.208)	(0.254)	(0.208)
Low birth weight	-1.290**	-0.877**	-1.327**	-0.881**
	(0.549)	(0.425)	(0.548)	(0.424)
Missing Birth weight	-0.703	-0.369	-0.753	-0.394
	(1.186)	(0.935)	(1.183)	(0.933)
Teenage mother	-2.901***	-1.484***	-2.893***	-1.485***
	(0.555)	(0.436)	(0.554)	(0.436)
Missing Teenage mother	-2.548***	-1.644**	-2.549***	-1.651**
	(0.923)	(0.730)	(0.917)	(0.730)
Constant	46.347***	49.132***	46.432***	49.105***
	(1.246)	(0.967)	(1.245)	(0.967)
Fixed Effects	No	Yes	No	Yes
Observations	8,326	8,326	8,326	8,326